

Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11) EP 0 715 164 A3

(12)

## EUROPEAN PATENT APPLICATION

(88) Date of publication A3:  
18.06.1997 Bulletin 1997/25

(51) Int. Cl.<sup>6</sup>: G01N 21/88

(43) Date of publication A2:  
05.06.1996 Bulletin 1996/23

(21) Application number: 95118538.8

(22) Date of filing: 24.11.1995

(84) Designated Contracting States:  
DE ES FR GB IT

(30) Priority: 29.11.1994 JP 294176/94

(71) Applicant: JAPAN ELANCO COMPANY LIMITED  
Kita-ku, Osaka (JP)

(72) Inventors:  
• Yamamoto, Taizo  
Osaki-shi, Osaka 536 (JP)

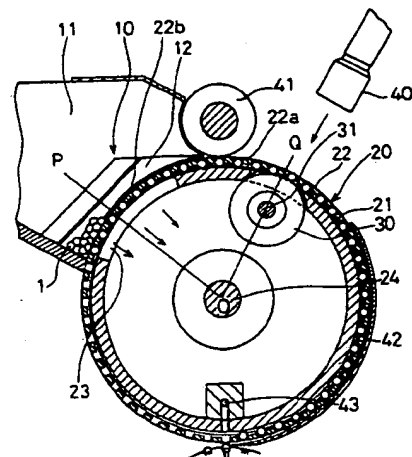
• Yagyu, Motohiro  
Yamabe-gun, Nara 630-22 (JP)  
• Kawaguchi, Yoshihisa  
Kashihara-shi, Nara 634 (JP)  
• Nagao, Akira  
Tenri-shi, Nara 632 (JP)

(74) Representative: VOSSIUS & PARTNER  
Siebertstrasse 4  
81675 München (DE)

(54) Side face examination apparatus for pressed articles, conveyor for pressed articles and external appearance examination apparatus for pressed articles

(57) Pressed articles are arranged substantially vertical in guide grooves, and transferred to pockets of a conveying drum which is intermittently rotated. The pressed articles are rotated at least more than one turn by a pressed article rotating roller while the pockets are stopped at predetermined positions, and the whole side face of the pressed article is observed by an image pickup apparatus. After changing posture of the pressed articles to be substantially horizontal posture by a posture changing apparatus, front and rear surfaces of the pressed articles are observed by image pickup apparatuses while the pressed articles are held and conveyed on respective sides of equilateral polygons of conveying drums which have equilateral polygonal cross-sections.

FIG. 1



EP 0 715 164 A3



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 95 11 8538

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. CL.6)
A	PATENT ABSTRACTS OF JAPAN vol. 006, no. 059 (P-110), 16 April 1982 & JP 57 003032 A (FUJI ELECTRIC CO LTD), 8 January 1982, * abstract *	1,18,19	G01N21/88
A	US 3 811 552 A (BOLLMAN R ET AL) 21 May 1974 * column 11, line 63 - column 14, line 62; figure 13 *	1,18,19	
A	US 4 472 960 A (MOTOYAMA SHIMESU ET AL) 25 September 1984 * column 3, line 21 - line 59 * * column 5, line 65 - column 6, line 17 * * figures 2,4 *	1,18,19	
A	EP 0 172 663 A (MUTUAL CORP) 26 February 1986 * abstract; figure 3 *	1,18,19	
A	EP 0 605 317 A (FRANCO BELGE DE FABRICATION DE) 6 July 1994 * abstract; claims 1,5,6; figures 1,3 *	1,18,19	TECHNICAL FIELDS SEARCHED (Int. CL.6) G01N
A,P	EP 0 634 647 A (NIPPON ELANCO) 18 January 1995 * claim 1; figure 1 *	1,18,19	
A	EP 0 615 931 A (NIPPON ELANCO) 21 September 1994 * column 6, line 50 - column 10, line 40; figure 3 *	11,12	
A	GB 2 108 070 A (FUJI ELECTRIC CO LTD; SANKYO CO) 11 May 1983 * page 1, line 42 - line 80; figures 1,2 *	7,8	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 8 April 1997	Examiner Tabellion, M
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

EPO FORM 1503 (03.02) (P/M/CU)



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 95 11 8538

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	WO 82 03842 A (ACKLEY MICHAEL E) 11 November 1982 * abstract; figure 1 * -----	11,12	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 8 April 1997	Examiner Tabellion, M
<p><b>CATEGORY OF CITED DOCUMENTS</b></p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- &amp; : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.82 (P04/01)



European Patent  
Office

### CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid.
- namely claims:
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

### LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions.

namely:

- see sheet B -

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid.
- namely claims:
- ☐ None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims.
- namely claims:



European Patent Office

EP 95 11 8538 - B -

**LACK OF UNITY OF INVENTION**

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions, or groups of inventions, namely:

1. Claims 1-6,18-28 : Side face and external appearance examination apparatus.
2. Claims 7-17 : Conveying drums and conveyor system.